

WHAT IS CLAIMED IS:

1. A biliary catheter for endoscopic retrograde cholangiopancreatography procedures, the biliary catheter comprising:

a cannula having a proximal end, a distal end and at least one lumen extending the length thereof; and

an expandable chute disposed upon, and in fluid communication with, the distal end of the cannula, the chute expanding radially from a contracted configuration to an expanded conical configuration when in use.

2. The biliary catheter of claim 1, wherein the expandable chute is self-expanding.

3. The biliary catheter of claim 1, wherein the expandable chute is inflatable.

4. The biliary catheter of claim 3, wherein the inflatable expandable chute comprises an inflatable member disposed within the expandable chute, the inflatable member being fluidly connected to an inflation source through the lumen within the cannula.

5. The biliary catheter of claim 1, wherein the expandable chute comprises a plurality of struts expanding radially from the distal end of the cannula forming the expanded conical configuration.

6. The biliary catheter of claim 5, wherein the plurality of struts comprises Nitinol.

7. The biliary catheter of claim 5, wherein the plurality of struts comprises stainless steel.

8. The biliary catheter of claim 5, wherein polymeric webbing is disposed over the plurality of struts forming the expandable chute.

9. The biliary catheter of claim 1, wherein the expandable chute comprises a coil expanding in a helical configuration.

10. The biliary catheter of claim 9, wherein the coil is a round wire.

11. The biliary catheter of claim 9, wherein the coil is a wire ribbon.

12. The biliary catheter of claim 9, wherein the coil is a cable wire.

13. The biliary catheter of claim 9, wherein the coil is a machined hypotube.

14. The biliary catheter of claim 9, wherein the coil material is selected from the group consisting of stainless steel, tungsten tantalum, platinum, gold, and combinations thereof.

15. The biliary catheter of claim 1, wherein the expandable chute comprises a semi-rigid polymeric material.

16. The biliary catheter of claim 1, wherein radiopacity is added to at least a portion of the expandable chute.

17. A system of biliary catheters for endoscopic retrograde cholangiopancreatography procedures, the system comprising:

a guiding biliary catheter having a proximal end, a distal end and at least one lumen extending the length therethrough, the guiding biliary catheter further having a tapered distal tip; and

a pulling biliary catheter having a proximal end, a distal end and at least one lumen extending the length therethrough, the pulling biliary catheter further having an expandable chute disposed upon the distal end, wherein in use the pulling biliary catheter is advanced within the lumen of the guiding biliary catheter.

18. The system of biliary catheters of claim 17, wherein the expandable chute of the pulling biliary catheter is self-expanding.

19. The system of biliary catheters of claim 17, wherein the expandable chute of the pulling biliary catheter is inflatable.

20. The system of biliary catheters of claim 19 wherein the inflatable expanding chute of the pulling biliary catheter is a zero-tip balloon catheter.

21. The system of biliary catheters of claim 19 wherein the inflatable expanding chute of the pulling biliary catheter assumes a toroidal shape when inflated.

22. The system of biliary catheters of claim 17, wherein the expandable chute comprises a plurality of radially expanding struts interconnected by a polymeric webbing. ✓

23. The system of biliary catheters of claim 17, wherein the expandable chute ✓
comprises a helically expanding coil.

24. The system of biliary catheters of claim 17, wherein the expandable chute comprises a semi-rigid polymeric material.

25. A method for gaining access to the ducts of the biliary tree, the method comprising the steps of:

providing a guiding biliary catheter having a proximal end, a distal end and a lumen extending the length therethrough, the guiding biliary catheter further having a tapered distal tip;

providing a pulling biliary catheter having a proximal end, a distal end and at least one lumen extending the length therethrough, the pulling biliary catheter further having an expandable chute disposed upon the distal end;

providing a therapeutic biliary catheter;

advancing the tapered distal tip of the guiding biliary catheter within the opening of the papilla of Vater;

advancing the pulling biliary catheter through the lumen of the guiding biliary catheter and into the opening of the papilla of Vater;

expanding the expandable chute of the pulling biliary catheter within the papilla of Vater;

partially retracting the expanded chute of the pulling biliary catheter to improve access to the biliary tree; and

advancing the therapeutic biliary catheter through the pulling biliary catheter to the desired duct within the biliary tree.

26. A method for gaining access to the ducts of the biliary tree, the method comprising the steps of:

providing a biliary catheter having a proximal end, a distal end, a lumen extending the length therethrough and terminating in an opening in the distal end, and an inflatable balloon disposed proximate the distal end thereof;

advancing the balloon catheter into the opening of the papilla of Vater;

inflating the balloon;

partially retracting the biliary catheter to improve access to the biliary tree; and

advancing a therapeutic catheter through the lumen beyond the distal end of the balloon catheter.

27. A system of biliary catheters for endoscopic retrograde cholangiopancreatography procedures, the system comprising:

a guiding biliary catheter having a proximal end, a distal end, and at least one lumen extending the length therethrough, the guiding biliary catheter further having a tapered distal tip; and

a pulling biliary catheter having a proximal end, a distal end, and at least one lumen extending the length therethrough, the pulling biliary catheter further having an inflatable balloon disposed proximate the distal end, wherein in use the pulling biliary catheter is advanced within the lumen of the guiding biliary catheter.

28. A guiding biliary catheter for endoscopic retrograde cholangiopancreatography the catheter having a proximal end, a distal end, the distal end including a tapered distal tip, the catheter comprising:

a first lumen extending from a location proximal the distal end of the catheter to an opening proximate the distal tip, the first lumen being sized to allow therapeutic biliary catheters to pass therethrough;

a second lumen extending from a location proximate the proximal end to a location proximate the distal end;

a balloon in fluid communication with the second lumen disposed adjacent the distal end of the catheter, the balloon being sized so that when inflated, the outer balloon diameter is greater than the diameter of an opening of a papilla of Vater.